UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

EPA United States Environmental Protection Agency Office of Pesticide Programs

MEMORANDUM

3/19/2018

SUBJECT: Acute Toxicity Review for *NUGEN 2M Disinfectant Wipes*, EPA Reg. No.: 6836-372

FROM: Narayanan Parthasarathy
Chemistry and Toxicology Team
Product Science Branch
Antimicrobials Division (7510P)

THRU: Jenny Tao, Team Leader (Acute Toxicology)
Chemistry and Toxicology Team
Product Science Branch
Antimicrobials Division (7510P)

TO: Eric Miederhoff, PM Team 31 / Karen Leavy
Regulatory Management Branch I
Antimicrobials Division (7510P)

Registrant: Lonza Inc		
Decision No.: 536947	Submission No.: 1013549	E-Sub No.: 2535
DP No.: 445562	Action Code: 570	
MRID No(s).: 49445604, 50473201 & 50473202		

Formulation from label			
PC code(s)	CAS #(s)	Active Ingredient(s)	% weight
111801	32289-58-0/133029-32-0	Poly(hexamethylenebiguanidine) hydrochloride	0.0890%
069165	32426-11-2	Octyl decyl dimethyl ammonium chloride	0.1333%
069166	5538-94-3	Dioctyl dimethyl ammonium chloride	0.0534%
069149	7173-51-5	Didecyl dimethyl ammonium chloride	0.0799%
069105	68424-85-1	Alkyl (C_{14}, 50%; C_{12}, 40%; C_{16}, 10%) dimethyl benzyl ammonium chloride	0.1778%
		Other Ingredients	99.4666%
		Total	100.0000%

I. BACKGROUND

The Registrant, Lonza Inc, has submitted an application to support a label amendment for their product: *NUGEN 2M Disinfectant Wipes* EPA Reg. No. 6836-372. The registrant is citing existing studies under one MRID 49445604 to address Acute Oral, Acute Dermal, Acute Inhalation and Skin Sensitization toxicity end points. The test substance had a pH range of 10.5 to 12.5. These studies were reviewed by the Agency (DP 431982/6/1/2016) and Categories IV, IV, IV and non-sensitizer were assigned respectively for the above end-points. Currently, the registrant had formulated the test substance (Basic CSF dated 3/9/2018) to a pH range of 7.5 to 9.5. Lowering the pH range to 7.5 to 9.5 will not alter the Categories of the above toxicity end points since the end points are already Category IV and non-sensitizer. The registrant is providing studies to address Primary Eye (MRID 50473201) and Primary Skin Irritation (50473202) end points for the current test substance (pH 9.0).

The subject product is used as a disinfectant on hard, nonporous treated surfaces, indoor and outdoor, for homes, institutional and industrial use.

II. FINDINGS/RECOMMENDATIONS

1. The submitted eye irritation and skin irritation studies are acceptable.

2. The acute toxicity profile of *NUGEN 2M Disinfectant Wipes*, EPA Reg. No. 6836-372, is currently:

Study	MRID	Toxicity Category	Status
Acute Oral Toxicity	49445604	IV	Cited
Acute Dermal Toxicity	49445604	IV	Cited
Acute Inhalation Toxicity	49445604	IV	Cited
Primary Eye Irritation	50473201	III	Acceptable
Primary Skin Irritation	50473202	IV	Acceptable
Dermal Sensitization	49445604	Nonsensitizer	Cited

III. PRODUCT LABELING

1. Signal Word: CAUTION

2. Precautionary Statements and First Aid Statements of the proposed label (12/21/2017) are acceptable.

The policy on antimicrobial towelettes and wipes is under consideration by the Antimicrobial Division. Once the policy has been finalized, registrants will be informed if there are changes that need to be made regarding the registration process and if there are any additional data that must be submitted to the Division for review.

DATA REVIEW FOR PRIMARY EYE IRRITATION TESTING (870.2400)

Product Manager: RM 31 **Reviewer:** N. Parthasarathy

MRID No: 50473201 **Study Completion Date:** December 14, 2017
Laboratory Study No: 46590

Testing Laboratory: Product Safety Labs
Author(s): Carolyn Lowe, LATG

Quality Assurance (40 CFR § 160.12): Included

Test Material: DS 6642. Clear colorless liquid. pH 9.0 Expected to be stable for the duration of testing.

Species: Rabbit/New Zealand Albino.
Weight: 2094-2798 g (Females)
Age: 12 or 14 weeks
Source: Robinson Services
Housing: Temperature Range: 19 -23°C
Humidity Range: 44-55%
Photoperiod: 12- hour light/dark cycle
Acclimation: 5 or 19 days
Summary:

1. **Toxicity Category**: III
2. **Classification**: Acceptable

Procedure (Deviations from 870.2400): None.

Test Procedure: The test substance (0.1ml) was administered into the conjunctival eye sac. Eye irritation was scored at 1 hr, 24, 48, and 72 hours and Days 7, 10 and 14) after treatment.

Results:

Observations	Number "positive"/Number tested						
	Hours				Day 4	Day 7	Day 10
	1	24	48	72			
Corneal Opacity	0/3	2/3	2/3	1/3	1/3	0/3	0/3
Iritis	0/3	0/3	0/3	0/3	0/3	0/3	0/3
Conjunctivitis	2/3	2/3	1/3	1/3	1/3	0/3	0/3

Time Post Instillation	Severity of Irritation-Mean Score
1 hour	9.3
24 hours	14.7
48 hours	17.0
72 hours	7.3
Day 4	4.3
Day 7	1.3
Day 10	0.0

Test substance is mildly irritating to eye.

Calculated from individual scores of ocular irritations (Average of 3 animals)

Individual irritation score: (Corneal opacity + area) x 5 + Iritis x 5 + (Redness + Chemosis + Discharge) x 2

DATA REVIEW FOR SKIN IRRITATION TESTING (870.2500)

Product Manager: RM 31

Reviewer: N. Parthasarathy

MRID No: 50473202

Study Completion Date: 12/14/2017

Laboratory Study No: 46591

Testing Laboratory: Product Safety Labs
Author(s): Carolyn Lowe, LATG

Quality Assurance (40 CFR § 160.12): Included

Test Material: DS 6642. Clear colorless liquid. pH 9.0 Expected to be stable for the duration of testing.
Species: Rabbit/New Zealand albino
Weight: 2390-2460 g (Females)
Age: 14 weeks
Source: Robinson Services Inc
Housing: Temperature Range: 19-22°C
Humidity Range: 60-64%
Photoperiod: 12- hour light/dark cycle
Acclimation: 13 days

Summary:

1. **Toxicity Category:** IV
2. **Classification:** Acceptable

Procedure (Deviations from 870.2500): None

Test Procedure: On day 0, 0.5ml of undiluted powdered test substance was applied as a skin patch. Skin irritation was evaluated according to Draize method of scoring (30-60 min, 24, 48, 72 hours, and Days 7, 10, 14) after patch removal.

Results:

Individual Irritation Scores
ERYTHEMA/EDEMA

Animal	Sex	Time After Patch Removal						
		30-60 min	24 hrs	48 hrs	72 hrs	Day 7	Day 10	Day 14
1	F	1/2	1/1	1/0	1/0	1/0[1]	0/0[1]	0/0[1]
2	F	1/0	1/1	1/0	1/0	1/0[1]	1/0[1]	0/0[1]
3	F	1/1	1/0	1/0	1/0	1/0	0/0[1]	0/0
Total		3/3	3/2	3/0	3/0	3/0	1/0	0/0
Mean		1.0/1.0	1.0/0.7	1/0.0	1.0/0.0	1/0.0	0.3/0.0	0/0
Total (PDI)[2]		2.0	1.7	1.0	1.0	1.0	0.3	0.0

-[1]Desquamation at dose site -[2]PDI = Average Erythema + Average Edema

Primary Dermal Irritation Index (PDII) = Sum of PDI for 30-60 minutes, 24, 48 and 72 hours /4 = 1.4

Classification: Slightly irritating

CLASSIFICATION SYSTEM

PDII	Classification
0	Non- irritating
> 0 -2.0	Slightly irritating
2.1-5.0	Moderately irritating
>5.0	Severely irritating